

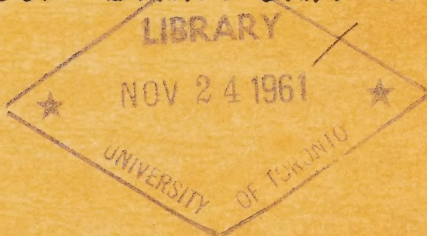
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THE BIRCH BARK CANOE



ONTARIO

ONTARIO DEPARTMENT OF LANDS AND FORESTS

HON. J. W. SPOONER, Minister

F. A. MacDOUGALL, Deputy Minister

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Large "canoe" birches are scarce, but peeling the bark is easy in early summer. Good bark is one-eighth inches thick, is made pliable by soaking in hot water.



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THE BIRCH BARK CANOE

EARLY successes in exploration and commerce depended upon a humble, native invention: the Indian birch bark canoe. Used in North America for millennia before the coming of the white man, the Indian canoe was adopted immediately by him as the most practical craft for water travel and carrying of goods. The commerce of the continent floated on birch bark until the development of shipping lines and railroads.

The Indian canoe was made in many regions — wherever the canoe birch trees grew — the eastern woodlands from Newfoundland to Lake of the Woods, and the woodland basin of the Mackenzie River up to the foothills of the Rockies.

The native canoe varied in appearance from tribe to tribe but its basic design remained essentially the same. It was so widely accepted by the peoples of this continent of low watersheds and inter-connected lakes and rivers that, where birch bark was not available, the basic, wooden canoe frame was covered with moosehide or canoe-shaped with spruce or elm bark.

All the materials needed for canoe building were found aplenty, growing together in

many areas. The native craftsman used long sheets of clear, eighth-inch bark, taken from the "grey" canoe birch tree; spruce rootlets for the sewing thread and lashings; spruce gum for glueing and waterproofing; white cedar for inside sheathing; and white ash for ribs and gunwales. Working these materials with tools of bone and stone, a man and a woman could build a canoe "on location" in a week's time.

When damaged, the canoe could be repaired within a few hours, often with materials found growing at hand.

In areas where canoe materials grew luxuriantly, the building of canoes became an Indian industry of importance. Canoes were a valuable trading commodity that earned "foreign" goods for the builders. Through widespread trading, birch bark canoes came into general use across the continent. The best canoes came from Canada where the Algonquins were recognized as the most skilful builders.

Although the birch bark canoe was cranky to handle and too frail for rough use, these disadvantages were overcome by the ability of native paddlers who were able to negotiate the leaf-light craft through fast and

rough water with a sure dexterity.

The white man, quick to perceive the versatility of the canoe, gave it his instant stamp of approval and, in many regions, it became his only vehicle for travel and transportation.

The logistics of the white man's commerce dictated to him the building of larger and stronger craft. The North West Company's *canot de maitre*, or Montreal canoe, built by Indian and halfbreed craftsmen, was large enough to carry up to four tons of baled trade goods, propelled by from six to ten paddles.

The large canoes traversed the main rivers and the Great Lakes system from Lachine, Quebec, to Grand Portage, southwest of the mouth of Pigeon River on Lake Superior. Canoe freight was transhipped here to smaller, North canoes in which it was carried through the Northwest to the Arctic and into the interior of British Columbia.

Grand Portage developed, logically, the continent's greatest building yards of North canoes, using materials from as far west as Lake of the Woods. Lachine was the main centre for the building of Montreal canoes; materials were gathered in the

valleys of the Ottawa and St. Lawrence Rivers.

The birch bark canoe is a highly perishable craft. Although thousands of the great freight canoes were once in use, they disappeared suddenly and completely. For a century, there were none to be found anywhere.

It was for this reason that, in 1957, the National Museum of Canada, with the assistance of G. A. Gillies, well known lumberman of Braeside, Ontario, arranged with two master canoe builders in the valley of the Bonnechere River to build a *canot de maitre*, using the old methods and natural, woodland materials.

Matthew Bernard and his son, Michael, of Golden Lake Indian Reserve, built the canoe and called it *Gitchie Chee-man*, or Big Canoe. During the summer and fall of 1957, its construction was the greatest tourist attraction in the region of Algonquin Provincial Park. *Gitchie Chee-man*, the largest and costliest birch bark canoe in the world, is now on display in Ottawa.

The Big Canoe was Matthew Bernard's *tour de force*. Now quite elderly, he has retired from canoe building but likes to talk about the workmanship of himself and his co-workers, now deceased: David Coocoo, Sr.,

Jock and Joe Commanda, Tom Sarazin, Frank Meness and Joe Partridge. Today, on the Reserve which is recognized as the last important Ontario centre of Algonquin birch bark canoe building, the craft is kept alive by Michael Bernard and Dan Sarazin, the sons of the old masters.

Fearful that the building techniques will die with them — for the young men show no interest in the ancient craft — Matthew Bernard demonstrated canoe building in June, 1961, perhaps for the last time. His work was for the record. The explanations which follow, from the gathering of raw materials in the woods to the final gumming of the seams, is “our gift to the people of Canada”, the master craftsman said.

Gathering Materials

Raw woodland materials are harvested in June when the sap flows freely between the bark and cambium wood layers.

White spruce rootlets are easily found by scratching the earth with a stout, pointed stick. The rootlets fan out from ten to twenty feet from the base of the tree, just below the surface humus. Thin-pencil in size, they are ripped from the ground in great lengths and tied into pliable coils for easy carrying.

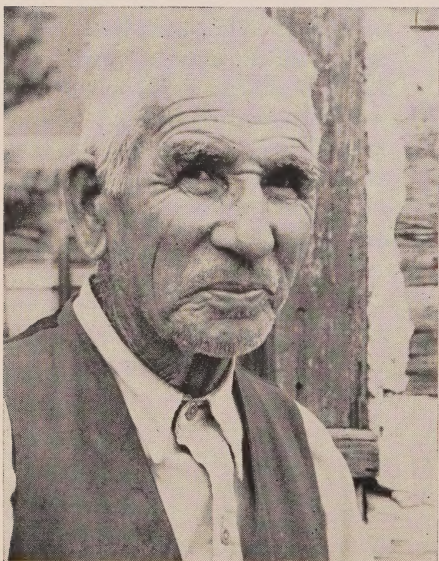
On the same tree may be found great lumps of congealed gum. Generally the result of planning, these clots of gum are produced by cutting a deep slash in the tree's bark the previous fall; this causes the tree to “bleed” in the following spring and early summer. The gum, which is hardened tree sap, may be removed without messy handling in June. By this time, the bleeding has stopped, and a soft crust of impregnated wood dust has formed over it.

White cedar is found in open woodlots and white ash in wetter, denser bush, often nearby. The cedar is used as thin sheathing or lining of the canoe, and the ash for the ribs and gunwales. These trees are cut into small logs (eight-inch butts) and peeled on the spot. (Nowadays, canoe builders are likely to buy rough-dressed cedar and ash at sawmills or lumber curing yards. This results in less mess and waste at the building site, and the cost is negligible.)

Birch bark, the essential material, is of prime concern, and suitable “grey” birch trees of sufficient girth and straightness of trunk are the subject of search throughout the year. A deer hunter in the fall (or a trapper in winter or spring) may locate desirable trees and mark them for future use. This saves



On a Montreal canoe, the top edging (gunwales) is forced together with a clamp and blows from a natural, twisted mallet.



Matthew Bernard offers the secrets of Indian canoe building as a gift to the people of Canada. In Golden Lake Reserve in Algonquin Provincial Park area, his ancient trade is carried on by his son, Michael (above).



White spruce rootlets, used for sewing, are found in abundance. They are soaked in water and sliced to size.



Bottom frame and forming poles give the canoe "bag" shape before the framework is applied from the inside.

The "crooked knife" is the most useful tool in canoe building. It is used as a drawknife (left) on a lining panel, and (right) to peel rootlets.



the considerable time otherwise devoted to search during the busy month of June.

Since birch trees take longer to lubricate between bark and wood than other trees, the canoe builder leaves the bark gathering until the end of June, or if the season is backward, until mid-July.

Birch bark is removed by cutting a straight, vertical slit on the smooth bole of the tree from the ground to the base of the lowest branch. When the bark is "ready", it may be peeled off in one sheet by working the outstretched hand between the bark and the wood layer.

Sheets of bark from six to eight feet long, without a blemish, are the largest sizes a builder can hope to find in our time. The days when he could find a 15-foot piece, to form a one-piece "bag", are gone, perhaps forever. (Large birch trees are eagerly sought out by lumbermen to sell to plywood manufacturers.) A stripped birch tree grows a paper-thin covering but takes four years to heal properly. It will never produce canoe bark within the lifetime of the same builder, Mr. Bernard says.

Rolls of bark, coils of rootlets, lumps of gum and peeled logs are taken to the canoe building site which is generally

on dry, shaded ground beside lake or river water where materials are soaked to keep them pliable and workable until required.

Preparing Materials

The experienced Indian canoe builder goes about his task with sure deftness, often with no shelter, and certainly with no power tools or canoe mould to build his craft around. His final success is assured because he has the "feel" of his materials; he knows the natural stresses and shrinkages of green materials; and he understands the allowances he must make to fashion a craft with the graceful, sweeping, curving lines that create the traditional symmetry of the Indian canoe. The secrets of the craftsman can only be learned with patience.

The spruce rootlets are scraped free of bark and split in half or quartered, depending on the thickness required for use as lacing, for use as thread to sew bark sheets together after they have formed the hull, or to sew together the bow and stern openings, or for use as lashings to bind together the ends of the seats or thwarts to the gunwales. The prepared rootlets are stored in water to keep them pliable.

The gum, in its crude stage, is wrapped in burlap sacking and immersed in boiling water

until it becomes a soft mass. Its impurities rise as scum and are removed. At this stage, the gum has lost its stickiness and can be handled easily.

To glue the bark and sheathing together inside the hull, the gum is reduced to the consistency of corn syrup and made very sticky by the addition of animal fat. Less fat is added to the gum used on the outside of the canoe so that it will harden (but not crack) in contact with cold water. Some builders have perfected the outside gum so that they can adjust it to suit the temperatures of the water in which the canoe will be used.

The white cedar is cut into thin, wide slats for the inside sheathing or lining. White ash is split into required sizes for seats, bow and stern posts, and gunwales.

Building the Canoe

Mr. Bernard finds it most efficient to build his canoe in or beside his Indian craft shop, a two-storey log building in the village on Golden Lake. He starts the canoe form on smooth ground and finishes it inside the shop where tanks hold soaking materials and where electricity provides light and hot-plate heat (but runs no power tools). During slack seasons, he builds small canoes with materials gathered in June.

To simplify the initial shaping of the small canoe, Mr. Bernard uses a heavy wooden bottom pattern which replaces the former ladder-like moulding frame of white cedar.

On the ground, the bottom pattern is set upon sheets of bark which curl upward and form the canoe walls. Stakes are driven into the ground against two forming, clamping poles. When the poles are tightened, they tighten and stretch the bark to form the shape of the canoe bottom. The natural scallops formed in the bark by stretching and bending are slit to smooth out the hull surface.

The top edges, or gunwales, of white ash are lashed to the bark at the centre, temporarily. The curved bow and stern posts (which give the canoe its rounded ends) are also put in place temporarily. The canoe is now taken inside the shop for finishing.

Thin slats of white cedar are fitted to form the inside walls of the canoe and to protect the outer bark walls. The U-shaped ash ribs are next installed, locking the siding into place behind them; their notched ends fit into place in the split gunwales. The canoe has now reached its familiar bulging-side, flat-bottom shape. The cedar lining and bark walls are strengthened and

permanently set in place by the continuous application of hot spruce gum, thinned to a runny syrup with animal fat.

To complete the sides, the final pieces of bark are cut and fitted. The top edges of the bark are drawn through the split gunwales, gummed, and bent to form a neat edging. A topping strip is next installed, T-fashion, across the top of the gunwales to enclose the bark edging and further strengthen the canoe from bow to stern.

To make the outside of the hull watertight, the fitted edges of the bark shapes are sewn together. Hot gum is applied to the hull stitching, to the stitched and fitted bark around the bow and stern posts, and to any flaws in the bark that might cause leaks. To discover leaks remaining in bark or seams, the canoe is sunk in water, and any leaks are gummed. Any flat blemishes on the bark surface are removed and sanded.

Throughout the building of a canoe, the handiest tool is the "crooked knife" or *man-i-go-togan*, a knife used as splitter, shaper and planer of materials, with a fitted, homemade handle of wood. The cutting blade is about six inches long, flat, sharp on one edge and with an abrupt hook on the end. It was first

made by a cutlery firm in Sheffield, England, and used as a trading piece by the pioneering fur companies. Across the continent, the Indians adopted it immediately, and many of the old knives in use today have blades worn down to slivers of hard steel.

A Special Art

The finished birch bark canoe remains a work of natural beauty since none of its surfaces are preserved in any way. The honey-coloured bark and the chocolate-coloured, irregular gummed seams and edges are pleasing to the eye, while the woodsy odours of the drying materials are tantalizing to the olfactory senses.

The Indian canoe still provides a severe test of the paddler's skill and sense of balance. Because of its construction, without a keel, its handling is regarded as a special art but, light and responsive, its mastery provides much pleasure and satisfaction.

With so much to offer, its admirers believe it should not become a mere collector's item or museum piece but should continue in use, a link with the past and a legacy for the future.



Making the largest birch bark canoe in the world at Golden Lake Reserve, Ontario, in 1957. It is now on display at the National Museum of Canada in Ottawa.



The finishing touch: hot spruce gum waterproofs all seams, inside and out.



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